

ABSTRACT

U.S.-Canadian Academy of Pathology
Presented March 6, 1990
Boston, Mass.

Presenter: Warren Maltzman

A NON ISOTOPIC HYBRID CAPTURE ASSAY FOR HIV NUCLEIC ACID SEQUENCES. L.S. Lee, H. Payne, C.-Y. Ou, G. Schochetman, and W. Maltzman, Enzo Biochem, New York, NY. and Centers for Disease Control, Atlanta, GA.

Oligonucleotide sequences were chosen from two relatively conserved regions of the human immunodeficiency virus type 1 (HIV-1) genome. These were then employed in a microtiter plate assay which involves the capture of target nucleic acid by virtue of its complementarity to an immobilized capture oligonucleotide. Hybridization is detected by incubation with a second specific signal oligonucleotide, using an enzyme-dependent amplification system to yield a colorimetric readout. This strategy has been applied to detection of HIV DNA and RNA sequences in both model systems and clinical specimens.

In experiments where enzymatically amplified HIV DNA, from either the gag or env regions, was the target, we were able to detect HIV DNA in all (36/36) samples from seropositive individuals. These results were in agreement with a radioactive "gel assay" performed in parallel on the same samples. The results of reconstruction experiments in which known amounts of HIV DNA were assayed in our nonradioactive system, suggest that application of this technology to the problem of detection of HIV in clinical samples might allow the identification of individuals who harbor low levels of HIV proviral or viral nucleic acid, e.g prior to seroconversion. To date, we have detected HIV DNA after amplification in 6/6 samples taken from individuals who were seronegative at the time of sampling, but who subsequently seroconverted.

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Oligonucleotide sequences were chosen from two relatively conserved regions of the human immunodeficiency virus type I (HIV-1) genome. These were then employed in a microtiter plate assay which involves the capture of target nucleic acid by virtue of its complementarity to an immobilized capture oligonucleotide. Hybridization is detected by incubation with a second specific signal oligonucleotide, using an enzyme-dependent amplification system to yield a colorimetric readout. This strategy has been applied to detection of HIV DNA and RNA sequences in both model systems and clinical specimens.

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SAMPLE FORMAT FOR TYPING ABSTRACTS. J. Doe, Q. Smith, and Z. Jones, City University Medical College, Anywhere, AL and People's Hospital, Somewhere, CA

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It is not necessary to skip a space between paragraphs. Just indent each paragraph three spaces.

Name and Address of Author for Correspondence:

W. Maltzman
Enzo Biochem
325 Hudson Street
New York, NY 10013

Office telephone number: (212) 741-3838

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Hiroshima and Nagasaki (1950) exposed to gamma and neutron Cancer (SCLC) made up 48% of 6 of the HN cases whereas it made up 34% of the HN cases and 5. Squamous cell carcinoma was and 28% of the UMC. Among smoking in the HN but not the HN

Results associated with abnormalities associated with chronic fibrosis, despite the negative correlation of hyaline membrane disease and fetal pneumonia, there were 10 (10%) patients with both conditions and 19 (20%) with hyaline membrane disease and inflammation of membranes, cord, and/or lung. In some instances, hyaline membrane disease coexisted, suggesting a possible pathogenetic relationship.

a pericentral distribution in immunohistochemical demonstration of zone 3 hepatocytes in 5/8 transmutes were negative. No dysplastic found. At the level of expression these transgenic mice, the HBV X acting as an oncogene and its requires further study.

EPITOPE, D-14, IN BARRETT'S ESO-AL ADENOCARCINOMA. JA Lapa MD⁺ and Naval Medical Center and *National

, Maryland.
was to evaluate the immunoperoxidase
hageal adenocarcinoma (EA), dysplastic
) and non-dysplastic Barrett's epithelial
out inflammatory atypia. In particu-
le monoclonal antibody D-14, which is
specific CEA epitope expressed in colonic
enocarcinoma. Four cases of EA, 4
stained by the avidin-biotin complex
terins to D-14 (E-Z-EM), CEA (Dako),
keratins (Becton-Dickinson, Boehringer-Mannheim
Intensity and pattern of staining
narcinomas showed 1-3+ luminal and
or D-14. Luminal staining (1-3+) was
DBE and 6 of 9 cases of NDBE. Only
plasmic staining for D-14 were seen in
ases, both NDBE. The other antibodies
failed to demonstrate differentiating
as. We conclude that EA shows strong
with D-14, while DBE and NDBE do not.
riteria for EA are not met, but strong D-14
is present, rebiopsy is recommended. The
d not help to differentiate DBE from NDBE.

BREAST CARCINOMAS - A COMPARISON BETWEEN IMAGE ANALYSIS AND FLOW CYTOMETRY W.M. Hamilton, B. Kamat, G.J. Heatley, L. Cook, Medical Center, Burlington, MA., New Hospital & Harvard Medical School, Boston, MA. Digitized image analysis (IA) and flow cytometry DNA ploidy of 30 invasive breast carcinomas stained slides of touch preparations and cytocentrifuge preparations were analyzed with the analyzer (CAS, Elmhurst, IL). FCM, using the Coulter, Hialeah, FL), was performed on disaggregated tissue samples stained with propidium iodide. The results FCM as the standard. The DNA indices measured (R=0.964, p<0.001). There were 16(53%) aneuploid tumors, the latter consisting of 1 and 2(14%) tetraploid tumors, and 3(21%) aneuploid peaks. There was agreement between 28 of 30(93%) tumors. A trend was observed and negative estrogen receptor expression, grade and mitotic rate, and lymphatic-vascular invasion. Smaller tissue samples, and permitted visualization and selection of tumor cells. Better resolution and greater sensitivity of multiple aneuploid peaks, information on the S-phase. Overall, the two methods comparable results and were complementary DNA ploidy of breast carcinomas.

327 EXPRESSION OF BLOOD GROUP ANTIGEN A (BGAA) EPITOPE ON TUMOR CELLS: A FAVORABLE PROGNOSTIC FACTOR FOR SURGICALLY RESECTED NON-SMALL CELL LUNG CANCER (NSCLC). J. Lee, J. Ro, A. Sahin, W. Hittelman, B. Brown, C. Mountain, and W. Hong. M. D. Anderson Cancer Center, Houston, TX

Previously, we reported that expression of epidermal growth factor receptor (EGFR) on tumor cells, assessed by an anti-EGFR monoclonal antibody 29.1 and the ABC immunoperoxidase technique, is an important prognostic factor for patients (pts) with NSCLC (Proc ASCO 8:226, 1989). However, this antibody was found to cross-react with the BGAA epitope which prompted us to examine NSCLC tumor sections using monoclonal antibodies for blood group antigen A and B, and Ulex europeus agglutinin I for H antigen. Of 164 pts, who survived at least one month after surgery, 61 pts had a blood type A, 20 type B, 73 type O, and 10 type AB; postsurgical stages were I in 68, II in 32, and III in 64 pts. Of 71 pts with blood type A or AB, 42 (59%) pts who had BGAA positive tumors survived significantly longer than the other 29 pts with BGAA negative tumors ($p < .001$) with a median survival of 70 and 15 months, respectively. This difference was independent of tumor stage, histologic grade, or cell types. In comparison, a median survival for 93 pts with blood type B or O was 39 months ($p = .047$). Expression of blood group antigen B or H on tumor cells, however, was not a significant prognostic factor. These data indicate that expression of BGAA epitope on tumor cells is an important prognostic factor for NSCLC and it might play an important role for the regulation of tumor growth.

328 A NON ISOTOPIC HYBRID CAPTURE ASSAY FOR HIV NUCLEIC ACID SEQUENCES. L.S. Lee, H. Payne, C.-Y. Ou, G. Schochetman, and W. Maltzman, Enzo Biochem, New York, NY, and Centers for Disease Control, Atlanta, GA.

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330 * PRIMARY MALIGNANT LYMPHIC IMMUNOHISTOCHEMICAL AND

W.J. Lennington, J. Greer, H. Schwartz, R. University Medical Center, Nashville, TN.

Primary malignant lymphomas of bone presenting in bone with no evidence of open biopsy in 9 patients and Craig need to 83 years of age with a male:female examination, 9 cases were categorized. ML, and 3 cases were small cell ML. Diagno- microscopy in 3 cases and by positive in all 13 cases.

Paraffin sections in all cases immunoperoxidase panel: L-26, LN1, Leu 22 (pan-T cell markers); and immunocytokeratin ML, 1 small non-cleaved ML, and cell phenotypes (L-26, LN1, and/or LN1) were identified in 3 of the B-cell ML features (1 case: UCHL+, Leu 22+; 1 case: One T-cell ML was positive for CD15 ar-

In summary, most primary ML of bone are at least intermediate grade, by immunohistochemistry; however, T-cell phenotypes and plastic embed a wider variety of lymphoid antigens generally satisfactory in open biopsies Craig needle biopsies. Decalcification with paraffin immunoperoxidase de-

331 LARYNEAL AMYLOIDOSIS: A REVIEW. J. Lewis, P. Kurt

Rochester, MN.

We have reviewed the clinicopathology of 22 cases of laryngeal amyloid. There were 11 males and 11 females. Hoarseness was the most common symptom. Involvement of the false cords, concomitant tracheobronchial and involvement were detected in one.

Grossly, these lesions presented as submucosal masses. Microscopic appearance was eosinophilic material with birefringence with the Congo red stain performed in 19 cases. Eighty percent of the light chain was detected. Beta-2-microglobulin were negative. Plasma cells were always polyclonal.

Ten patients underwent resection. One patient died of amyloidosis. In one case, a systemic amyloidosis or hemato-

Laryngeal amyloidosis is a rare immunohistochemical studies show that patients do not develop plasma cell disease. The usual clinical course is persistent or recurrent resp-

Abstract

*Presented at US-Canadian Academy of Pathology Meeting
Boston, Massachusetts, March 1990*

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L.S. Lee, H. Payne, C.-Y. Ou, G. Schochetman and W. Maltzman, Enzo Biochem,
New York, NY and Centers for Disease Control, Atlanta, GA.

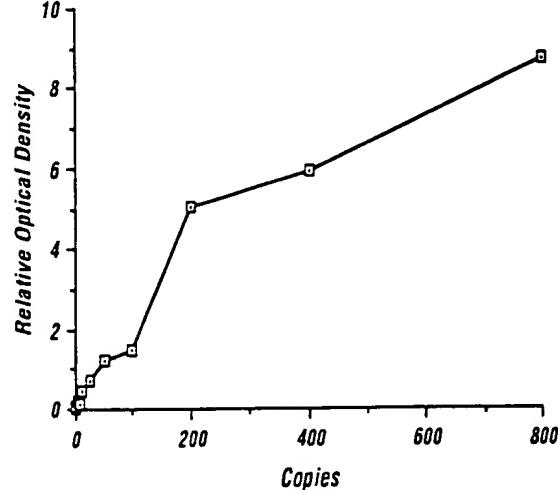
Oligonucleotide sequences were chosen from two relatively conserved regions of the human immunodeficiency virus type 1 (HIV-1) genome. These were then employed in a microtiter plate assay which involves the capture of target nucleic acid by virtue of its complementarity to an immobilized capture oligonucleotide. Hybridization is detected by incubation with a second specific signal oligonucleotide, using an enzyme-dependent amplification system to yield a colorimetric readout. This strategy has been applied to detection of HIV DNA and RNA sequences in both model systems and clinical specimens.

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Figure 2.

DETECTION OF HIV SEQUENCES IN AMPLIFIED SAMPLES OF CONTROL REACTIONS

Sample	Copies	Relative Optical Density
2393	800,000	93.45
2410	80,000	38.28
2398	8,000	15.38
2391	800	8.74
2390	400	5.91
2395	200	5.03
2400	100	1.44
2394	50	1.19
2403	25	0.682
2397	12.5	0.455
2399	6.25	0.104
2402	3.12	0.170
2392	1.56	0.038
2396	0.00	0.014
water	0.00	0.003



Samples represented 1 μ g of human DNA which was amplified for 35 rounds in the presence of the indicated number of copies of cloned HIV DNA. Relative optical density was read at the termination of the detection reaction and normalized to 2 μ l of the undiluted amplification reaction product. In all cases OD's of greater than 1.00 were based upon assays of diluted samples that gave OD readings between 0.1 and 1.0.